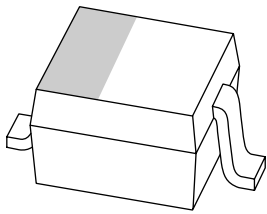


DATA SHEET



BAS321 General purpose diode

Product data sheet
Supersedes data of 1999 Feb 09

2004 Jan 26

General purpose diode

BAS321

FEATURES

- Small plastic SMD package
- Switching speed: max. 50 ns
- General application
- Continuous reverse voltage: max. 200 V
- Repetitive peak reverse voltage: max. 250 V
- Repetitive peak forward current: max. 625 mA.

APPLICATIONS

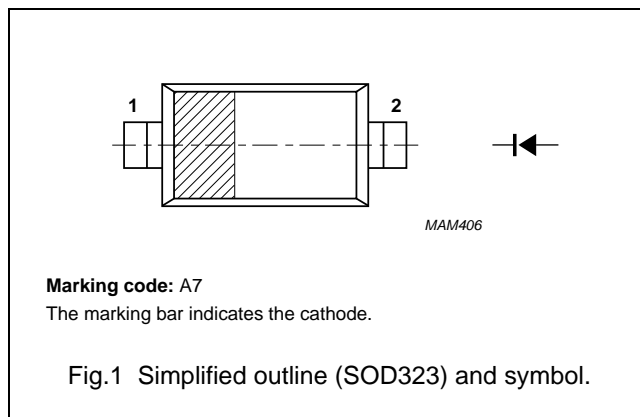
- General purpose switching in e.g. surface mounted circuits.

DESCRIPTION

The BAS321 is a general purpose diode fabricated in planar technology and encapsulated in a plastic SOD323 package.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | cathode |
| 2 | anode |



ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|-------------|---------|--|---------|
| | NAME | DESCRIPTION | VERSION |
| BAS321 | - | plastic surface mounted package; 2 leads | SOD323 |

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------------|--|------|------|------|
| V_{RRM} | repetitive peak reverse voltage | | - | 250 | V |
| V_R | continuous reverse voltage | | - | 200 | V |
| I_F | continuous forward current | see Fig.2; note 1 | - | 250 | mA |
| I_{FRM} | repetitive peak forward current | $t_p < 0.5$ ms; $\delta \leq 0.25$ | - | 625 | mA |
| I_{FSM} | non-repetitive peak forward current | square wave; $T_j = 25$ °C prior to surge; see Fig.4 | | | |
| | | $t = 1$ μ s | - | 9 | A |
| | | $t = 100$ μ s | - | 3 | A |
| | | $t = 10$ ms | - | 1.7 | A |
| P_{tot} | total power dissipation | $T_{amb} = 25$ °C; note 1 | - | 300 | mW |
| T_{stg} | storage temperature | | -65 | +150 | °C |
| T_j | junction temperature | | - | 150 | °C |

Note

1. Device mounted on an FR4 printed circuit-board.

General purpose diode

BAS321

CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MAX. | UNIT |
|----------|-----------------------|--|------------|---------------------|
| V_F | forward voltage | see Fig.3 $I_F = 100\text{ mA}$ $I_F = 200\text{ mA}$ | 1 1.25 | V V |
| I_R | reverse current | see Fig.5 $V_R = 200\text{ V}$ $V_R = 200\text{ V}; T_j = 150\text{ °C}$ | 100 100 | nA μA |
| C_d | diode capacitance | $f = 1\text{ MHz}; V_R = 0$; see Fig.6 | 2 | pF |
| t_{rr} | reverse recovery time | when switched from $I_F = 30\text{ mA}$ to $I_R = 30\text{ mA}; R_L = 100\ \Omega$; measured at $I_R = 3\text{ mA}$; see Fig.8 | 50 | ns |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|-------------------------------|-------|------|
| $R_{th(j-s)}$ | thermal resistance from junction to soldering point | $T_s = 90\text{ °C}$; note 1 | 130 | K/W |
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | note 2 | 366 | K/W |

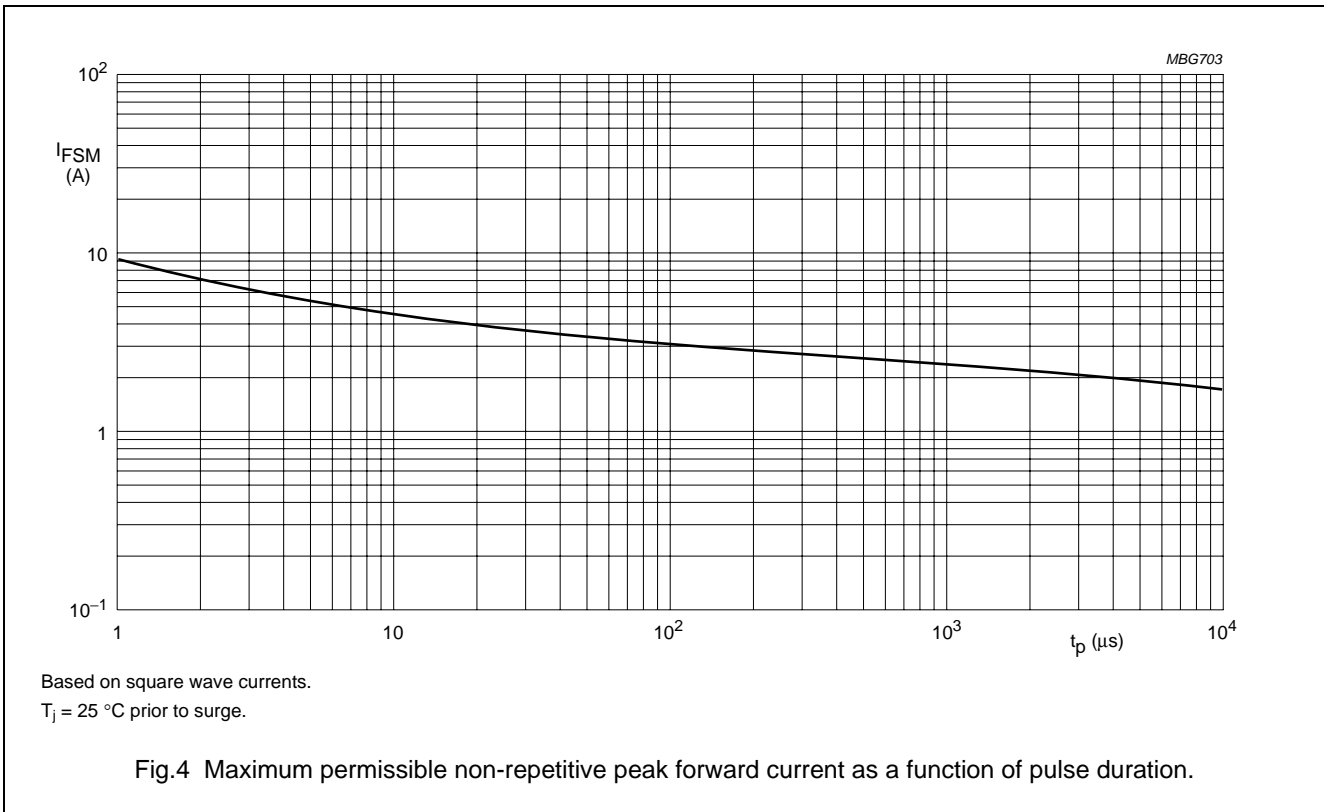
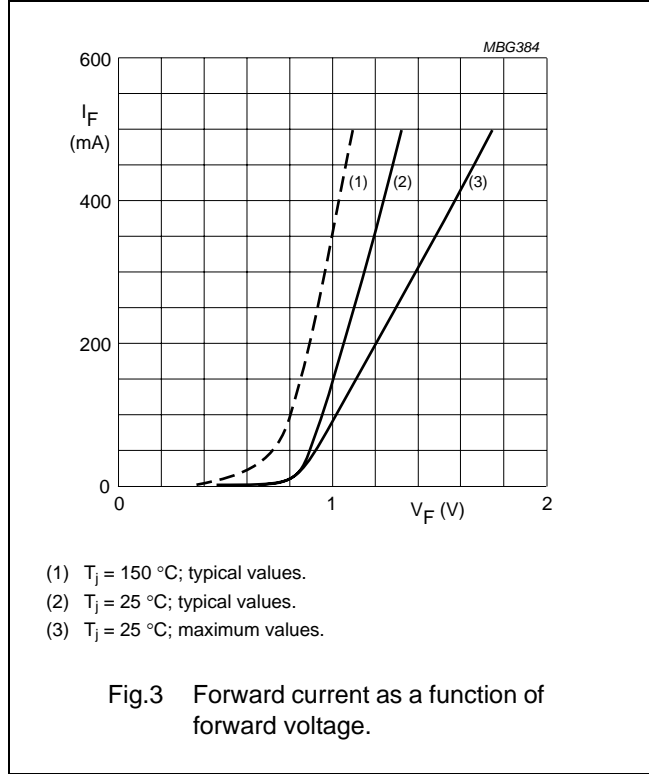
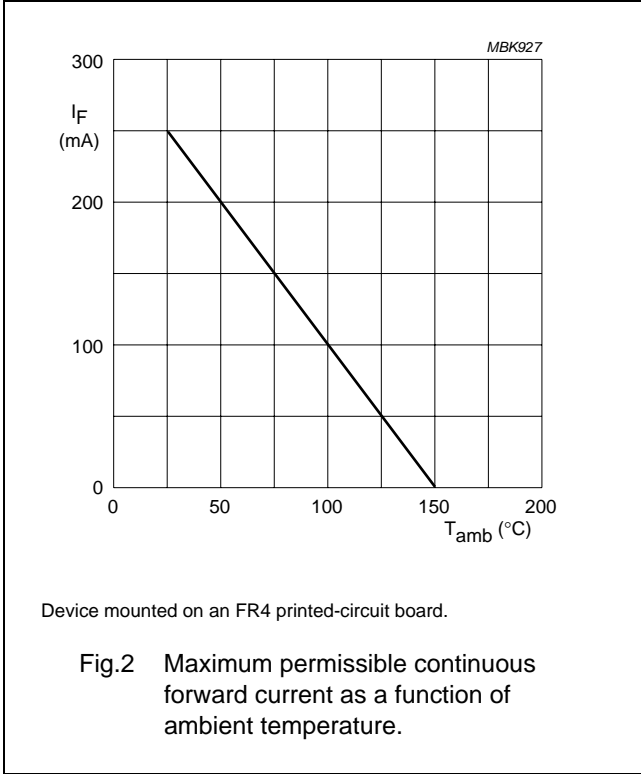
Notes

1. Soldering point of cathode tab.
2. Device mounted on an FR4 printed circuit board.

General purpose diode

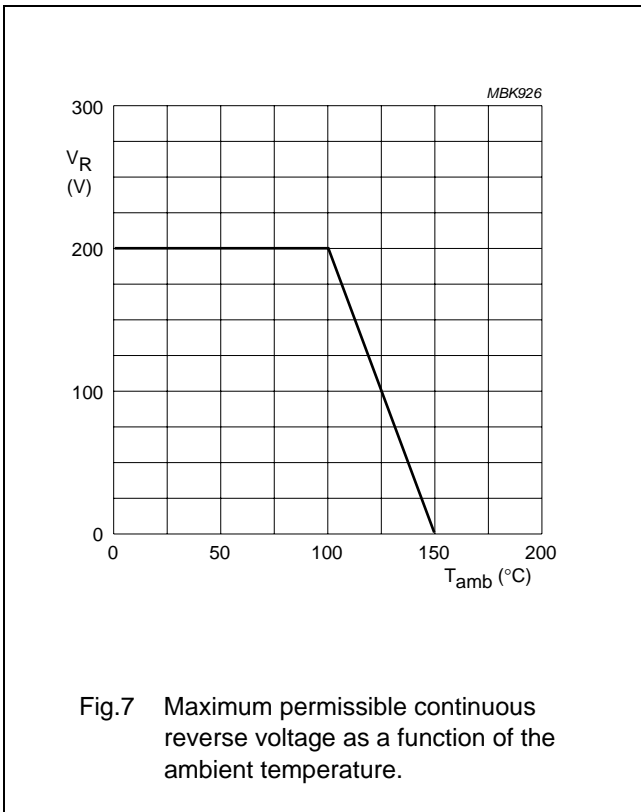
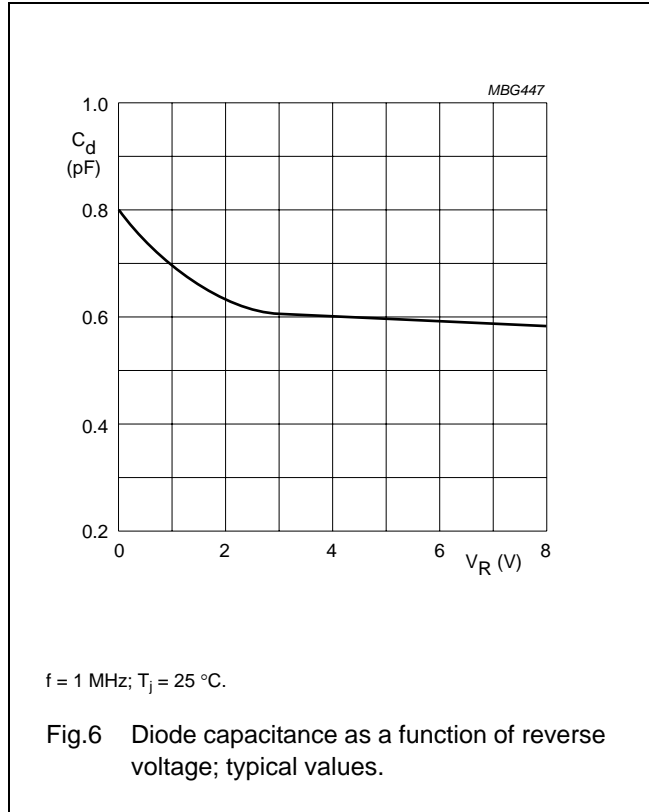
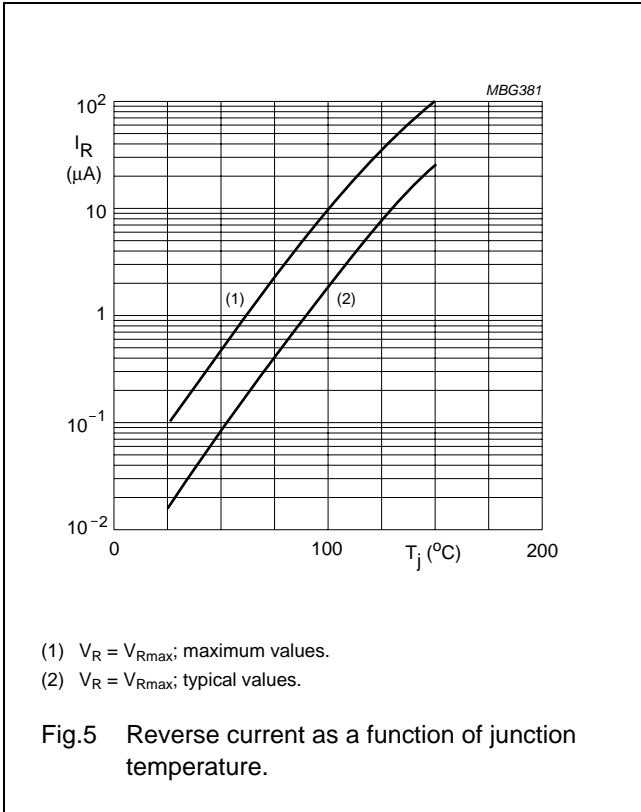
BAS321

GRAPHICAL DATA



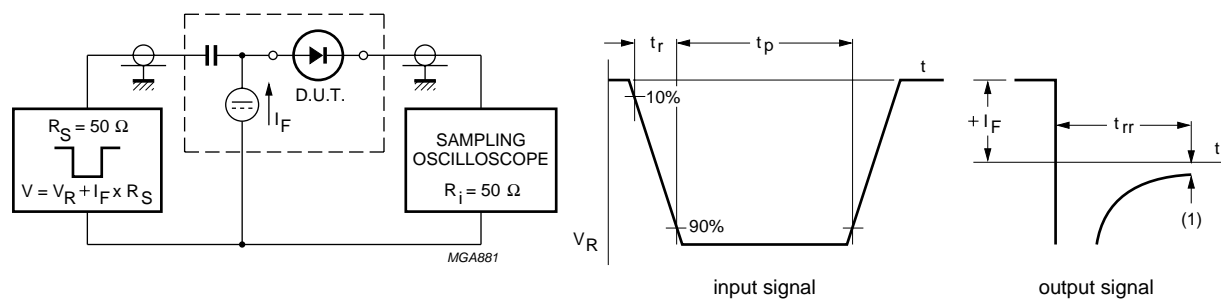
General purpose diode

BAS321



General purpose diode

BAS321



(1) $I_R = 3 \text{ mA}$

Input signal: reverse pulse rise time $t_r = 0.6 \text{ ns}$; reverse voltage pulse duration $t_p = 100 \text{ ns}$; duty factor $\delta = 0.05$;

Oscilloscope: rise time $t_r = 0.35 \text{ ns}$;

Circuit capacitance $C \leq 1 \text{ pF}$ (oscilloscope input + parasitic capacitance)

Fig.8 Reverse recovery time and waveforms.

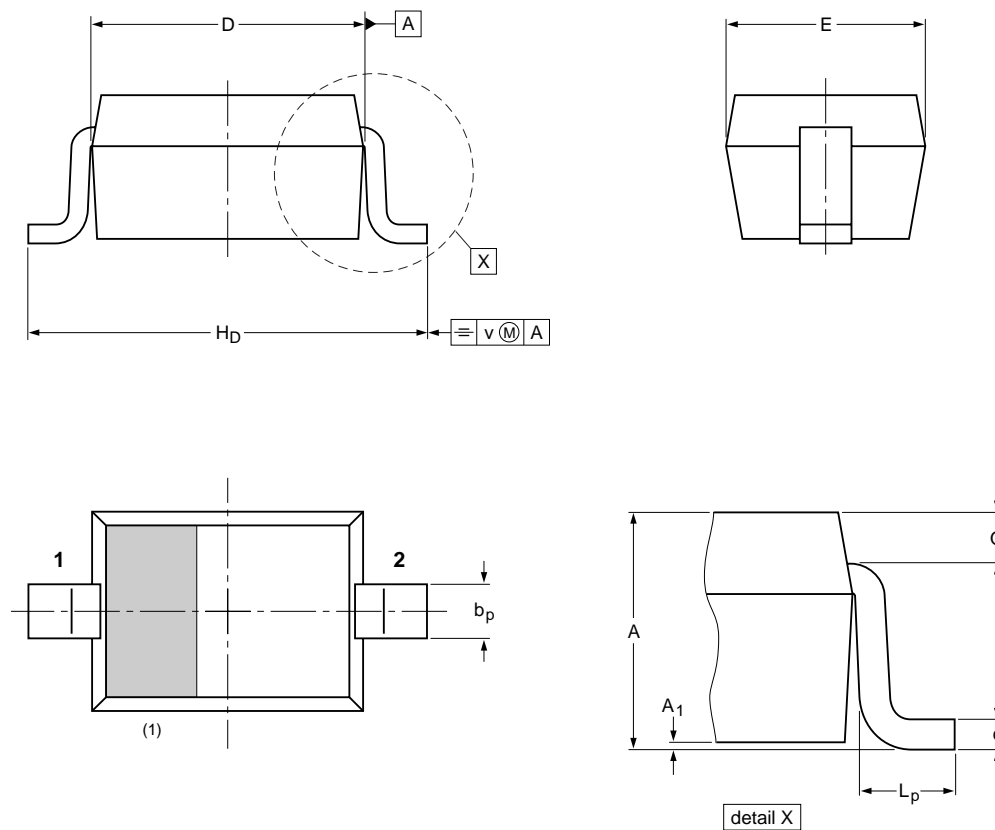
General purpose diode

BAS321

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max | b _p | c | D | E | H _D | L _p | Q | v |
|------|------------|-----------------------|----------------|--------------|------------|--------------|----------------|----------------|--------------|-----|
| mm | 1.1 0.8 | 0.05 | 0.40 0.25 | 0.25 0.10 | 1.8 1.6 | 1.35 1.15 | 2.7 2.3 | 0.45 0.15 | 0.25 0.15 | 0.2 |

Note

1. The marking bar indicates the cathode

| OUTLINE VERSION | REFERENCES | | | EUROPEAN PROJECTION | ISSUE DATE |
|--------------------|------------|-------|-------|------------------------|---------------------------------|
| | IEC | JEDEC | JEITA | | |
| SOD323 | | | SC-76 | | 03-12-17 06-03-16 |

General purpose diode

BAS321

DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITION |
|--------------------------------|-------------------------------|---|
| Objective data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary data sheet | Qualification | This document contains data from the preliminary specification. |
| Product data sheet | Production | This document contains the product specification. |

Notes

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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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